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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YOUNGER AHLUWALIA,
MATTI KIIK, and THOMAS D. KAROL

Appeal 2010-001528
Application 10/766,649
Technology Center 1700

Before CHARLES F. WARREN, CATHERINE Q. TIMM, and
STEPHEN WALSH, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 1, 7, 13, and 16-20 in the Office Action mailed April 29, 2008 (Office Action). 35 U.S.C. §§ 6 and 134(a) (2002);

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

37 C.F.R. § 41.31(a) (2008).

An oral hearing was held June 10, 2010.²

We affirm the decision of the Primary Examiner.

Claim 1 illustrates Appellants' invention of a heat insulating and fire resistant composite material, and is representative of the claims on appeal:

1. A heat insulating and fire resistant composite material comprising:
 - a. a first layer which comprises a prefabricated microcells component, a surfactant component, surfactant-generated microcells, a filler component and a binder component; and
 - b. a second layer comprising a metallic component adhered to the first layer.

Appellants request review of the ground of rejection under 35 U.S.C. § 103(a) advanced on appeal by the Examiner: claims 1, 7, 13, and 16-20 over Lynn (US 6,093,481) in view of Horner, Jr. (US 6,365,533 B1) (Horner) and Martin (US 5,713,974). Ans. 3; App. Br. 3.³

Appellants argue claim 1 as representative of the appealed claims as a group as well as argue the dependent claims as a group “[f]or all the reasons mentioned” for claim 1. Supp. App. Br. 5 and 10. Thus, we decide this appeal based on claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2008).

² An appeal, whether on brief or heard, is decided on the record. 37 C.F.R. § 41.37(c)(1)(vii) (2006) provides in pertinent part: “Any arguments or authorities not included in the brief or reply brief filed pursuant to § 41.41 will be refused consideration by the Board, unless good cause is shown.” *See also* Manual of Patent Examining Procedure (MPEP) §§ 1205.02 and 1209 (8th ed., Rev. 3, August 2005; 1200-14 and 1200-48).

³ We considered the Supplemental Appeal Brief filed March 10, 2009, the Examiner's Answer mailed April 27, 2009, and the Reply Brief filed June 25, 2009. We have also considered the Communication filed June 7, 2010,

Opinion

We considered the totality of the record in light of Appellants' arguments and the evidence with respect to claim 1 and the ground of rejection advanced on Appeal. *See, e.g., In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)); *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992) ("After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.") (citing, *inter alia*, *In re Spada*, 911 F.2d 705, 707 n.3 (Fed. Cir. 1990)).

I

We agree with the Examiner's findings that Lynn would have disclosed to one of ordinary skill in the art a bilaminate facer as an insulating sheathing on each surface of an insulation board, wherein inner layers 17, 18 of the facer may be, among other things, a fibrous glass mat, and outer facing sheets 11, 12 may be a thermoplastic polymer layer or film or a polymeric mixture having a combination of desirable properties such as, among other things, mechanical stability, heat and chemical resistance, and insulation properties. Ans. 3, citing Lynn, e.g., col. 3, ll. 26-37 and

styled "Letter Brief Based Upon A Recent Relevant Decision of the Court of Appeals for the Federal Circuit" (Letter Brief).

49-53, col. 4, ll. 50-65, and Fig. 2. *See also* Lynn col. 2. We also agree with the Examiner's further findings that Lynn would have disclosed that outer facing sheets 11, 12 can be "any conventional foam facer" which imparts desirable properties, and the outer polymeric layers can be modified by additives to achieve the properties. Ans. 3, citing Lynn, e.g., col. 3, ll. 26-37 and 49-53, col. 4, ll. 9-14. Indeed, Lynn would have disclosed that at least one of outer facing sheets 11, 12 are formed from the described polymeric or polymer mixture layer or film and the other layer can be the conventional foam facer. Lynn, col. 3, ll. 26-37; *see also* Lynn col. 2. As the Examiner points out, the insulating bilaminate material taught by Lynn does not comprise a prefabricated microcells component, a surfactant component, and surfactant-generated microcells containing layer as claimed in claim 1. Ans. 4.

We further agree with the Examiner's findings that Horner would have disclosed to one of ordinary skill in the art a foamed facer for an insulation board which comprises a surface coating of a prefoamed composition on a glass mat, wherein the prefoamed composition comprises, among other things, a thixotropic polymer latex as a binder, a foam sustaining surfactant component, surfactant-generated microcells, and desirable additives, but does not contain prefabricated microcells. Ans. 4, citing Horner col. 3, ll. 1-22, 45-46, and 51-53, col. 4, ll. 16-20, and col. 5, ll. 13-16. We agree with the Examiner's finding that Martin would have disclosed to one of ordinary skill in this art prefabricated microcells useful as insulating materials in exterior coatings comprising, among other things, latex and acrylic materials, and additives. Ans. 4, citing Martin col. 3,

ll. 62-67, and col. 10, ll. 36-50.

On this basis, the Examiner concludes that one of ordinary skill in the art would have used Martin's insulative prefabricated microcells in Horner's prefoamed coatings for insulative board facers, and would have used such insulative prefoamed coatings as an outer facing sheet 11, 12 of Lynn's bilaminate facer for an insulation board in the reasonable expectation of successfully improving the durability and insulating properties of Lynn's insulative boards. Ans. 4.

We find here that the Examiner's statement of the ground of rejection in the Answer is coextensive with the statement thereof in the Office Action. Office Action 2-4.

II

Appellants submit that the Examiner erred in reaching this conclusion. App. Br. 7. According to Appellants, the Examiner "offers nothing more than the conclusory statement that, since all elements of Claim 1 are allegedly well known, it would have been obvious to one of ordinary skill in the art to modify [Lynn] to arrive at . . . [the] claimed invention in order to improve the durability and thermal insulation value of the facer." App. Br. 7; *see also* App. Br. 9. Appellants argue that the Examiner's position "is completely lacking of a rationale regarding the level of one of ordinary skill in the art at the time of . . . [the] invention as it pertains to the knowledge required to incorporate 'Horner's' adhesive latex/filler/surfactant coating composition' and 'Martin's microspheres' within the outer layers of the bilaminate facer of [Lynn], let alone address the knowledge required to

incorporate those features while achieving the benefits alleged.” App. Br. 7-8 (original emphasis deleted).

In these respects, Appellants further submit that the Examiner “provides no rationale whatsoever to account for the leap of logic one of ordinary skill in the art would be required to make in order to modify the materials disclosed in [Lynn] to achieve a new composite material which includes” the elements of claim 1 and “still function as intended.” App. Br. 8. “Contrary to the [Examiner’s] assertions, materials cannot be simply added and removed on a whim without directly affecting the characteristics of the materials.” App. Br. 8.

Appellants contend that Lynn’s “facers . . . are characterized as films.” App. Br. 8 (original emphasis deleted), citing Lynn col. 3, l. 28. Appellants contend Lynn limits the “total thickness” of the insulation boards with facers to “about 0.5 inches (~12.7 mils) to about 4.25 inches (~ 106 mils),⁴ of which the thickness of the facers is generally 0.3 mils to 5 mils, with monolayer facers being preferably about 0.3 mils to 3 mils and composite facers being preferably about 0.3 mils to 4 mils.” App. Br. 8, citing Lynn col. 5, ll. 34-41; *see also* App. Br. 3-4. Appellant contends that Horner’s facer “comprises a fiber glass mat coated with a prefoamed composition,” wherein the facer includes “a coating that is from about 5 mils to about 100 mils” and “can have a thickness of about 100 mils.” App. Br. 8-9, citing Horner col. 3, ll. 34-35.

⁴ We find Appellants’ conversions from inches to mils are in error. We find that the actual conversions are 0.5 inches to 500 mils, and 4.5 inches to 4500 mils.

On this basis, Appellants assert “that one of ordinary skill in the art looking to [Horner] would not combine the teachings of [Horner] with [Lynn] because [Horner] relates to facers that are very thick (e.g., 100 mils) whereas [Lynn] teaches facers that are films (i.e., very thin) having a thickness of 0.3 to 5 mils for composite facers.” App. Br. 9.

III

The Examiner responds that since the “references are of the same field of endeavor (facers), combining the components to obtain beneficial effects for an improved product” would have been within the ordinary skill in the art. Ans. 5. The Examiner points out that adding prefabricated microcells as an additive to Horner’s coating composition which contains additives, is a matter of routine optimization to one of ordinary skill in the art, and “since Lynn teaches that any conventional foam facer having desired properties . . . may be used as outer layer, the collective teachings of the prior art render the claimed invention obvious.” Ans. 5. The Examiner finds that “[s]ince Lynn teaches that any conventional foam facer may be used as outer layer, a workable thickness of foamed outer layer is deemed to be an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to obtain required insulation value for the same end as the claimed invention.” Ans. 5-6 (original emphasis deleted). “There is no reason . . . to believe Lynn’s facer necessarily requires a thickness which would render the foamed layer formed of Horner’s coating composition nonfunctional,” and since “appellants have admitted that Horner teaches a foamed coating having thickness from about 5 to 100 mils, at least the end points of the thicknesses

of the priory art overlap at about 5 mils.” Ans. 6 (original emphasis deleted).

IV

In the Reply Brief, Appellants submit that the Examiner’s statement in response to Appellants’ position in the Appeal Brief that the prior art references are in “the same field of endeavor (facers)” and thus combining the components of the references to obtain beneficial properties for an improved product would have been within the ordinary skill in the art,

fails to acknowledge that the specified classes of materials proposed by [Lynn] for the facing sheets 11 or 12 comprise a large number of substances with quite different properties, and thus require additional analysis for determining whether the various combination of those materials are compatible depending on how they are assembled to reach a proposed combination. The Final Office Action, Examiner’s Answer, and file wrapper history, are all completely lacking of any analysis in this regard.

Reply Br. 4; *see also* Reply Br. 3. *See above* p. 7.

Further in the Reply Brief, Appellants contend that Lynn teaches away from using Horner’s “relatively thick facer,” contending that Lynn limits the thickness of each of facing sheets 11 and 12 to about 0.3 to 5 mils, while Horner describes a facer that “is, at least, 15 mils thick and possibly as much as 130 mils thick because the facer includes a foam coating which is 5 mils to 100 mils thick . . . and a fibrous mat which is from 10 mils to 30 mils thick.” Reply Br. 5-6 (original emphasis deleted), citing Lynn col. 3, ll. 34-35, and col. 4, ll. 6-15.

In this respect, Appellants further contend that Lynn is not silent with respect to the thickness of a foamed outer layer, pointing out that Lynn specifies that the thickness of facing sheets 11, 12, whether a polymeric sheet or a conventional foam facer, is from about 0.3 mil to 5 mils thick. Reply Br. 6-7, citing Lynn col. 3, ll. 26-28 and 36-40, and col. 5, ll. 36-37. Appellants contend that, contrary to the Examiner's finding that Horner teaches a foamed coating having a thickness from about 5 to 100 mils with the 5 mils endpoint overlapping Lynn's 5 miles endpoint, Horner's facer comprises a foam coating of 5 mils to 100 mils and a mat of about 10 mils to about 30 mils, for a total thickness of about 15 mils to about 130 mils. Reply Br. 7, citing Horner col. 3, ll. 1-5 and 34-35. Appellant argues that "at best, the facers of [Horner] are 3 times thicker than the thickest proposed facers of [Lynn] and as much as 433 times thicker than the thinnest facers proposed by" Lynn. Reply Br. 7.

V

In the Letter Brief, Appellants submit that the court in *In re Vaidyanathan*, No. Civ. 2009-1404, slip copy, 2010 WL 2000682 (Fed. Cir. May 19, 2010) (Nonprecedential), stated that the USPTO must, in Appellants' words, "provide a 'specific hint or suggestion' of the alternation needed to arrive at the claimed invention," pointing to the statement by the court that "the examiner should at least explain the logic or common sense that leads the examiner to believe that the claim would have been obvious." Let. Br. 2-3, citing *Vaidyanathan*, 2010 WL 2000682, slip op. at 9 (quoting *Perfect Web Technologies, Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009)). Appellants thus contend that *Vaidyanathan* supports the

position that the Examiner “must explicitly articulate reasoning with some rational underpinning to support an asserted obviousness conclusion,” and the Examiner’s “conclusory statements pointed out in at least . . . [the] Reply Brief” are deficient for establishing obviousness. Let. Br. 3.

VI

The Examiner’s explanation of the combination of Lynn, Horner, and Martin shifted the burden to Appellants to submit argument and evidence to the contrary. We are of the opinion that Appellants have not carried that burden.

We determine that, contrary to Appellants’ position, the Examiner did not err in reaching the conclusion of obviousness based on the evidence in the combination of Lynn, Horner, and Martin. Indeed, the Examiner established that the facts in Lynn, Horner, and Martin would have led one of ordinary skill in this art to combine Martin’s insulative prefabricated microcells as an additive in Horner’s prefoamed coating for a glass mat to form a facer for an insulation board, and to further use the thus modified prefoamed coating of Horner and Martin as an outer facing layer 11 or 12 over a glass mat inner layer 17 or 18 to form a facer bilaminate of Lynn. *See above* pp. 3-4 and 7. In these respects, the Examiner pointed out the similarity in facing layer materials and the properties thereof between Martin (e.g., latex; prefabricated microcells for insulation), Horner (e.g., latex binder in prefoamed coating outer layer and glass mat inner layer; facer for insulation board), and Lynn (foamed outer layer and glass mat inner layer; facer for insulation board). *Id.* Thus, the Examiner properly concluded that the combination of Lynn, Horner, and Lynn reasonably established the

motivation and the reasonable expectation of success to one of ordinary skill in this art for using the materials of the references in an obvious way to arrive at the claimed heat insulative and fire retardant material encompassed by claim 1. *See, e.g., KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 415-16 (2007) (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”); *Kahn*, 441 F.3d at 985-88; *In re Sovish*, 769 F.2d 738, 742-43 (Fed. Cir. 1985) (skill is presumed on the part of one of ordinary skill in the art); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“The test for obviousness is . . . what the combined teachings of the references would have suggested to those of ordinary skill in the art.”); *see also Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364 (Fed. Cir. 2007) (“the expectation of success need only be reasonable, not absolute”); *In re O’Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988) (“For obviousness under § 103, all that is required is a reasonable expectation of success.”).

Indeed, the Examiner correctly explained how the references conveyed information with respect to laminated facing layers for insulation boards to one of ordinary skill in the art of insulation materials as well as the inferences that this person would have drawn from such information, and how this person would have used that information.⁵ This is all that is required of the Examiner in making out a case of obviousness. *Cf.*

⁵ It is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, *see In re Fritch*, 972 F.2d 1260, 1264-65 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826 (CCPA 1968), presuming skill on the part of this person. *Sovish*, 769 F.2d at 743.

Vaidyanathan, 2010 WL 2000682, slip op. at 8 (“the perspective of a person of ordinary skill must frame the obviousness inquiry, and assertions of what such a person of ordinary skill would have found to be obvious require sufficient explanation to permit meaningful appellate review”).

Appellants’ contentions that more is required of the Examiner are not based on argument or evidence with respect to identifying any deficiencies of the references which would undermine the factual foundation of the thrust of the ground of rejection. For example, while Appellants correctly argue that Horner’s facer comprises the prefoamed coating *and* a glass mat, the thrust of the rejection is that one of ordinary skill in the art would coat, among other things, the glass mat which forms Lynn’s inner layer 17 or 18 with Horner’s coating composition that has been modified by Martin’s prefabricated microcells to form the outer layer 11 or 12 of Lynn’s bilaminate facer. Appellants do not explain why one of ordinary skill in this art would not have separated Horner’s prefoamed coating from the glass mat and applied only that preformed coating to Lynn’s glass mat inner layer.

Thus, Appellants’ argument that Lynn’s limitation on the thickness of outer facing layers teaches away from using Horner’s facer comprising the prefoamed coating *and* glass mat also fails. Indeed, Lynn already supplies a glass mat layer, and as the Examiner points out, even if Horner’s limitation on the thickness of the prefoamed coating for facers is used by one of ordinary skill in this art to apply the prefoamed coating to Lynn’s glass mat following Lynn’s thickness limitation for the foamed outer facer layer 11 or 12, the lower end point of 5 mils in Horner’s thickness range overlaps the

upper end point of 5 mils in Lynn's thickness range, thus suggesting a useful thickness for the prefoamed coating. *See, e.g., In re Geisler*, 116 F.3d 1465, 1469-70 (Fed. Cir. 1997), and cases cited therein.

VII

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Lynn, Horner, and Martin with Appellants' countervailing evidence of and argument for nonobviousness and conclude, by a preponderance of the evidence and weight of argument, that the claimed invention encompassed by appealed claims 1, 7, 13, and 16-20 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

kmm

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